

I attended the GCCC meeting Dec. 21, 2016 on electric vehicle deployment. This is a written comment submitted on hydrogen fuel cell cars in response to the presentation that day.

Electric Vehicle Charging Stations. There are 647 electric vehicle (EV) charging outlets, distributed over 294 public charging stations, in Connecticut, according to the U. S. Dept. of Energy. (accessed Jan. 11, 2017;

http://www.afdc.energy.gov/locator/stations/widget/results?utf8=%E2%9C%93&location=connecticut&fuel=ELEC&private=false&planned=false&owner=all&radius=false&radius_miles=5&ev_levels%5B%5D=none&ev_levels%5B%5D=1&ev_levels%5B%5D=2&ev_levels%5B%5D=dc_fast&ev_connectors%5B%5D=none&ev_connectors%5B%5D=NEMA1450&ev_connectors%5B%5D=NEMA515&ev_connectors%5B%5D=NEMA520&ev_connectors%5B%5D=J1772&ev_connectors%5B%5D=CHADEMO&ev_connectors%5B%5D=J1772COMBO&ev_connectors%5B%5D=TESLA&ev_connectors%5B%5D=all&ev_networks%5B%5D=none&ev_networks%5B%5D=AeroVironment+Network&ev_networks%5B%5D=Blink+Network&ev_networks%5B%5D=ChargePoint+Network&ev_networks%5B%5D=EV+Connect&ev_networks%5B%5D=eVgo+Network&ev_networks%5B%5D=GE+WattStation&ev_networks%5B%5D=Greenlots&ev_networks%5B%5D=OpConnect&ev_networks%5B%5D=SemaCharge+Network&ev_networks%5B%5D=Tesla&ev_networks%5B%5D=all . The DEEP site says there are over 400 stations (accessed Jan. 11, 2017;

http://www.ct.gov/deep/cwp/view.asp?a=2684&q=529116&deepNav_GID=2183). In contrast, the U. S. Department of Energy identifies only 1 hydrogen fueling station in the state; presumably this is the one at Proton OnSite in Wallingford. ie

The state of Connecticut supports the installation of publicly available EV charging stations by between 50% and 100% of the cost, and provides the electricity free of charge to the electric car owner. Thus the state has effectively resolved the “range anxiety” issue concerning the relatively low mileage available between charges. This avoids the conundrum of having to ask “which comes first, the charging station or the car purchase?”. It should be emphasized that to obtain the greatest impact for reducing carbon dioxide emissions the electricity used for charging should originate from renewable sources, not from fossil fuel-driven electric generation.,

Hydrogen Fueling Stations for Fuel Cell Cars. This Comment proposes similar support and funding for hydrogen fueling stations to provide hydrogen for fuel cell cars. This writer attended a “show and tell” demonstration of a hydrogen fuel cell vehicle presented by Proton OnSite in 2015. The vehicle was a minivan, and had a range between fueling stops of over 350 miles. Proton OnSite produces hydrogen using solar photovoltaic cells to provide the electricity needed to yield hydrogen from water. Fueling takes only about 5 minutes, affording convenience comparable to that of refilling an internal combustion engine-powered car with gasoline. This contrasts with the extended length of time required to recharge the electric battery of an EV. Hydrogen fuel cell cars thus have considerable advantages over plug-in EVs.

Hydrogen fuel cell cars, however, currently do face the “which comes first?” conundrum. The numbers of fuel cell cars and fueling stations are both below critical masses needed to sustain a market. A prospective purchaser would be reluctant to buy a fuel cell car without the certainty of having hydrogen fueling stations available, yet a private entrepreneur would be hesitant to invest in a fueling station not having an assured customer base.

In view of the important advantages of hydrogen fuel cell cars over EVs, this writer urges the state of Connecticut to support setting up a network of hydrogen fueling stations around the state, in order to help break the “which comes first?” conundrum. This program would mirror the subsidy program

already used for installing EV charging stations. Optimally the hydrogen would be produced by electricity from renewable sources. The speaker from Regional Economic Models, Inc. (REMI) at the December 21 meeting pointed out that as EVs become more popular, state revenue from the gas tax will fall, suggesting that gas stations will become redundant and close. The sites of former gas stations are ideal locations to install hydrogen fueling stations. Such properties are already developed for this purpose, and would require only converting the fuel handling equipment to store and deliver the hydrogen. The fueling station subsidies should be complemented by credits or rebates for purchasing hydrogen vehicles, as currently described in the Connecticut Hydrogen and Electric Automobile Purchase Rebate (CHEAPR) program.

Respectfully submitted,

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